April 2009

IMPROVING AIR QUALITY IN VIRGINIA

The Department of Environmental Quality monitors air quality across Virginia. The Commonwealth has made significant progress toward improving air quality in the past several years but must continue working to meet the challenge of ensuring all Virginians breathe clean, healthy air.

DEQ, other government agencies, and many Virginia businesses and organizations have taken important steps that will improve air quality. Some are outlined below.

Government Actions

- To support DEQ's efforts at improving air quality in Virginia, VDOT voluntarily includes specifications in all contracts to ensure that the paints, coatings, and asphalt used by VDOT meet stringent pollution standards. On days predicted to have unhealthy levels of ozone, VDOT voluntarily implements an Air Quality Action Day program, which limits VDOT actions such as mowing, vehicle refueling and painting. On these days, VDOT uses overhead message board signs urging the public to carpool, refuel after dark and take other measures to limit emissions.
- DEQ is implementing new standards on commercial and consumer products in the Richmond-Petersburg area that are expected to reduce emissions by approximately 6 tons of volatile organic compounds (VOC) per summer day.
- Designed with the assistance of an advisory group made up of citizens, government officials and academics from the Hopewell area, an air toxics monitoring study was conducted by DEQ in the City of Hopewell. The Office of Air Quality Monitoring sampled for air toxics at three locations over the course of two years. The data gathered from this study will be used to assist DEQ's Office of Risk Assessment with performing an analysis to determine if any potential air quality related health risks exist for the citizens of Hopewell.
- The 2006 General Assembly directed DEQ to evaluate the contribution of mercury to Virginia waters made by Virginia sources, including power plants. The study, presented in October 2008, showed that power plants located in surrounding states have an impact on Virginia waterways, as do power plants and industrial sources located in Virginia. This study also shows that federal regulations for power plants and industrial boilers will result in decreased mercury emissions and deposition. The study is located at the following web site: www.deq.virginia.gov/regulations/reports.html

A DEQ staff member changes a filter on an air monitor near Richmond, Virginia.

- Using $3,300,000 garnered from enforcement actions, DEQ has partnered with 14 Virginia jurisdictions to retrofit school buses with air pollution control devices. These devices not only help to improve overall air quality, but they also limit the children's exposure to harmful diesel exhaust fumes. Participating jurisdictions are Fairfax, Henrico, Roanoke County, Roanoke City, Virginia Beach, Norfolk, Frederick, Winchester, Loudoun, Rockingham, Harrisonburg, Alexandria, Arlington, Gloucester and Stafford. Over 1,400 school buses have been retrofitted using these funds.
- The Virginia Port Authority (VPA) obtained a $750,000 grant and provided over $2,000,000 of additional funds to purchase three hybrid locomotives. The devices have 80% fewer emissions of NO_X and particulate matter than did their predecessors and cut annual fuel costs to the VPA by $143,000.

One of the Hopewell air toxics study monitoring sites

Industry Actions

- As part of the Best Available Retrofit Technology program, the Georgia Pacific-Big Island paper facility located in Bedford County, Virginia, has committed to the installation of a new acid gas scrubber on its largest coal fired boiler. The scrubber will begin operation in 2012 and is expected to reduce emissions by up to 1,000 tons of SO_2 annually. These emission reductions should improve the visibility at scenic overviews in both the Shenandoah National Park and the James River Face Wilderness Area.
- In 2007 and 2008, James River Cogeneration Company, located in Hopewell, Virginia, and Cogentrix Virginia Leasing Corporation, located in Portsmouth, Virginia, installed dry lime scrubbers on their coal fired boilers in order to meet new federal regulations. The combined emissions reductions for these facilities may be 1,000 or more tons of SO_2 annually.
- In August of 2008, DEQ settled an enforcement action against Dupont Fabros for exceeding pollution limits, failing to operate appropriate air pollution control devices and other violations. In addition to paying $500,000 in penalty, the company also agreed to retrofit at least 24 generating units with air pollution control devices and to use only ultra-low sulfur fuel oil. Such control strategies will reduce NO_X emissions, a precursor to the formation of ozone, from the affected units by 80%.

Ozone Forecasting

- Another DEQ program provides air quality forecasts for the metropolitan areas of Richmond, Roanoke, Hampton Roads and Northern Virginia. These forecasts include information on expected levels of ozone and particle pollution. The agency also issues ozone forecasts for the Winchester area. The forecasts alert citizens when high pollution levels may occur. On those days, citizens, businesses and industry are encouraged to take effective steps that will help keep the air clean, including:
  - Avoiding unnecessary car trips;
  - Sharing a ride or using public transportation;
  - Postponing refueling vehicles and equipment until after dusk;
  - Limiting or halting the use of gasoline-powered lawn equipment;
  - Avoiding excessive engine idling.

To learn more about Virginia's air quality and regional air quality improvement programs, visit DEQ's website at www.deq.virginia.gov/airquality.

OZONE AND PARTICLE POLLUTION

Ground-level ozone is the main ingredient in smog. It is a colorless gas formed by the reaction of sunlight with vehicle emissions, gasoline fumes, solvent vapors, and power plant and industrial emissions. Ozone formation is most likely in hot, dry weather when the air is fairly still.

Particle pollution is made up of particles found in soot, dust, smoke and fumes. The burning of coal, oil, diesel and other fuels produces these particles. The particles are small enough to enter deep into the lungs and cause health problems.

Ozone and particle pollution have been linked to short-term health concerns, particularly among children, asthmatics, people with heart or lung disease and older adults. The effects of these pollutants can be minimized by avoiding strenuous activity or exercise when levels are high. Air quality forecasts issued by DEQ for the following day are available to plan activities during the summer months.

More information on these types of pollution is available at www.airnow.gov.